

# Exploring young adults' fears related to healthcare and dental procedures

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## ABSTRACT

**Background and Purpose:** Fear and anxiety related to dental and healthcare procedures are common among young adults and can negatively impact dental and healthcare consumership, resulting in poor health outcomes. **Purpose:** This cross-sectional study aimed to examine young adults' experiences of fear related to dental and healthcare procedures and the potential relationships between the two forms of fear experiences and demographic factors. **Methods:** Young adults (252) were recruited from a large public university and completed a survey about their dental and healthcare fear/anxiety as well as their confidence in healthcare professionals. Descriptive and correlational analyses were completed to describe the experiences of young adults and the relationships between variables. **Results:** Ten types of fear/anxiety were identified related to healthcare procedures, with the most common being needles and pain. Nine fears/anxieties were identified for dental visits, of which pain and sensory experiences other than pain were most common. Female participants were significantly more likely to report fear/anxiety related to dental procedures, and there was a statistically significant relationship between fear/anxiety related to healthcare procedures and that related to dental procedures. There was also a significant negative relationship found between confidence in healthcare providers and fear/anxiety related to healthcare procedures. **Conclusions:** Young adults experience fear/anxiety related to healthcare and dentist visits, and this fear/anxiety can impact their confidence in healthcare providers, such as primary physicians. The findings of the current study suggest primary care providers should be aware of potential fears/anxieties and offer patients appropriate supports.

**Keywords:** Anxiety, dentist, fears, healthcare, young adults

## Introduction

Fear and anxiety, or a state of uneasiness and worry, related to dental and healthcare procedures is common among young adults.<sup>[1]</sup> For example, 29% of 20-year-olds report dental fear.<sup>[2]</sup> Research has examined the impact of dental and healthcare fear for decades.<sup>[3-9]</sup> More recent findings report that when an individual experiences fear or anxiety related to dental and healthcare procedures, they are less likely to attend regular appointments,<sup>[10-14]</sup> more likely to delay care,<sup>[15]</sup> and more likely to only seek necessary treatment when problems arise.<sup>[11,14]</sup> Furthermore, higher levels of dental anxiety are associated with

lower oral health-related quality of life,<sup>[16]</sup> reduced overall oral health,<sup>[17]</sup> and increased destroyed teeth.<sup>[17]</sup>

Common themes in current research focusing on young adults' healthcare and dental fears revolve around pain, the unknown, embarrassment, distrust of personnel, and cost.<sup>[1,7,15,16,18-21]</sup> A significant contributor to the fear of pain is a fear of needles or injections, which 20–30% of young adults report.<sup>[19]</sup> A fear of the unknown, primarily related to reported concerns surrounding outcomes of medical procedures specifically, is also frequently reported and may manifest as anxiety,<sup>[1]</sup> especially among patients with limited procedural experience.<sup>[22]</sup>

Demographic factors, such as age, gender, race/ethnicity, and socio-economic status, also have a potential influence on the fears and anxieties young adults experience related to dental and

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Received: 12-06-2023

Revised: 12-12-2023

Accepted: 17-12-2023

Published: 24-05-2024

### Access this article online

#### Quick Response Code:



**Website:**  
<http://journals.lww.com/JFMPC>

**DOI:**  
10.4103/jfmpe.jfmpe\_961\_23

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**How to cite this article:** Chidley E, Burns-Nader S. Exploring young adults' fears related to healthcare and dental procedures. *J Family Med Prim Care* 2024;13:1830-6.

healthcare procedures.<sup>[1,19,23-26]</sup> Past studies note females to be more susceptible to dental anxiety and more often report fear and anxiety related to healthcare procedures,<sup>[1,19,23,24,26]</sup> including the fear of needles.<sup>[19]</sup> Conflicting with other studies, Ihara *et al.*<sup>[25]</sup> found males to have more severe dental fear and avoidance. Experiences of discrimination and inequities in care related to race and gender identity also increase one's likelihood of developing environment-related anxieties and fears and reducing engagement in continued care.<sup>[3]</sup>

Previous research finds that individuals experiencing fear related to healthcare or dental procedures are more likely to experience fear related to the other.<sup>[27]</sup> Young adults may be especially vulnerable to these fears.<sup>[2]</sup> It is during young adulthood that individuals begin independently navigating healthcare systems, including accessing a primary care physician.<sup>[28,29]</sup> However, engagement with primary care often decreases during adolescence and young adulthood.<sup>[29]</sup> Reasons young adults avoid care include unfavorable opinions of it, complications with communication, and poor past experiences with doctors.<sup>[21]</sup> The purpose of this study was to examine young adults' experiences of fear related to healthcare and dental procedures and potential relationships between the two forms of fear experiences and demographic factors. The following research questions were examined: 1) What are young adults' experiences of fear related to healthcare and dental procedures? 2) Is there a relationship between demographics and the type of healthcare and dental fears reported by young adults? and 3) Is there a relationship between young adults' fear of healthcare procedures and young adults' fear of dental procedures?

## Material and Methods

### Procedure

Following Institutional Review Board approval (03/04/21), participants were recruited using a convenience sampling strategy. Course instructors of undergraduate courses offered by the Department of Human Development and Family Studies at a large public university in the southeast United States were contacted via email for assistance with recruitment during the Fall of 2021. Instructors were asked to recruit participants from their classes, including offering students extra credit for participation. Instructors who agreed to aid in recruitment were provided a link to a Qualtrics survey to disseminate to their students.

Individuals interested in participating visited the survey page where consent information was provided, including inclusion criteria, which required participants be 18 years of age or old and English-speaking and have the capabilities to complete an online survey. After providing electronic consent, participants completed an online survey, which gathered information about their childhood experiences with pain and current dental and healthcare engagement, in addition to demographic and background questions. No identifiable information was collected.

### Measures

Demographic questions: Background demographics were

collected utilizing three questions that gathered information pertaining to participant age, gender, and race. Two additional questions collected information on whether participants received the majority of their primary healthcare in the United States and consistently received necessary vaccinations throughout their life.

Young Adults' Healthcare and Dental Experiences Survey: The purpose of this survey was to examine young adults' prior experiences with pain and their current engagement in healthcare and elective procedures. The survey consisted of a total of 59 scale-based, open-ended, and closed-ended yes/no questions and took approximately 20 minutes to complete. Questions assessed health conditions experienced during one's life; experiences with healthcare, dental, and elective procedures; and fear/anxiety and worry/nervousness pertaining to healthcare and dental procedures. For the purpose of the current study, the research team looked at questions specific to fear and anxiety related to dental and healthcare procedures (i.e., "Explain your feelings, such as fear/anxiety about healthcare procedures", "Explain your feelings, such as fear/anxiety about dental procedures", and "Do you have confidence in healthcare providers' ability to provide optimal care?").

### Analysis

Data were entered into Statistical Package for the Social Sciences (SPSS) software version 28 for analysis. Any incomplete data or those which appeared to contain illegitimate responses (i.e., completed in less than 2 minutes) were removed. Surveys were started by 276 participants, and 24 were removed during cleaning for a total of 252 surveys included in the study. Frequencies were used to summarize demographic information. Tests run included frequencies of all data; cross-tabulations between demographic variables and participants' fear/anxiety of dental and healthcare, demographic variables and type of fear/anxiety, and the types of the two forms of fear/anxiety; and non-parametric correlations between gender identity and fear/anxiety of dental and health procedures and confidence in healthcare providers using Spearman's rho.

## Results

### Participants

A total of 252 young adults aged 18–25 ( $M = 19.73$ ,  $SD = 1.268$ ) participated in the study, with most participants identifying as female and White. No respondents identified as American Indian or Alaska Native, Native Hawaiian or Pacific Islander, or Hispanic or Latino/Latina. 97.2% ( $n = 245$ ) received their primary healthcare in the United States, and 96.4% ( $n = 243$ ) reported maintaining their immunizations [see Table 1].

### Fear/anxiety related to healthcare procedures

A quarter of participants ( $n = 61$ , 24.2%) reported experiencing fear/anxiety related to healthcare procedures [see Table 2]. When examining types of fears/anxieties reported, many young adults reported their fear/anxiety to be associated with needles or pain ( $n = 12$ , 20.3%) or general anxiety/nervousness ( $n = 9$ ,

15.3%) [see Table 3]. All who reported fears/anxieties related to needles and past negative experience(s) were White and female [see Table 4].

**Fear/anxiety related to dental procedures**

20.6% (n = 52) of young adults reported having fear/anxiety related to dental procedures. While 22.0% of women reported experiencing dental fear/anxiety, only 9.1% of men reported the same, contributing to a statistically significant relationship between gender identity and fear/anxiety of dental procedures (Spearman's rho = 0.129, P = .041) [See Table 5].

The most commonly reported feelings of fear/anxiety related to dental procedures were pain and sensory experiences other than pain [see Table 6]. Like those regarding fear/anxiety related to healthcare procedures, all responses of needles and past negative experience(s) were from White female participants. More than half (n = 5, 62.5%) of Black or African American participants related their feelings of fear/anxiety related to dental procedures' responses to pain. Further breakdown by demographics is found in Table 7.

**Relationship between variables**

Of the 52 participants who noted experiencing fear/anxiety related to dental procedures, 27 (51.9%) also reported experiencing such feelings related to healthcare procedures [see Table 8]. There was a significant relationship between reported healthcare fear/anxiety and dental fear/anxiety (Spearman's rho = 0.284, P < .001). Additionally, correlations completed on variables of reported fear/anxiety related to healthcare procedures and confidence in healthcare providers' ability to provide optimal care showed a statistically significant negative relationship (Spearman's rho = -.142, P = .024), indicating that as confidence in healthcare providers decreased, likelihood of experiencing fear/anxiety relating to healthcare procedures increased.

**Discussion**

This study aimed to examine young adults' experiences of fear/anxiety related to healthcare and dental procedures and to investigate potential relationships between the two fear experiences and demographic factors. The first research question sought an understanding of young adults' fears of healthcare and dental procedures. In the current study, there was evidence that common types of fear/anxiety about healthcare procedures were related to needles and pain. For primary care providers, this is important to note because such fears significantly affect healthcare consumership, resulting in increased healthcare avoidance and reduced overall health.<sup>[19,30]</sup> Additionally, some young adults in the current study reported a lack of trust in medical personnel. Promoting primary physicians' understanding of young adults' experiences with lack of trust is important as past research denotes associations between distrust of medical personnel and healthcare renunciation, reduced healthcare utilization, and poorer medication adherence.<sup>[21,28]</sup> During adolescence and

**Table 1: Participant demographics**

	n	%
Gender Identity		
Male	33	13.1
Female	218	86.5
Non-Binary	1	0.4
Race/Ethnicity		
White	209	82.9
Black or African American	29	11.5
Asian	6	2.4
Other	8	3.2

**Table 2: Demographics of reported fear/anxiety related to healthcare procedures**

	n	% of Demographic Population
Gender Identity		
Male	6*	18.2
Female	54*	32.9
Non-Binary	1	100
Race/Ethnicity		
White	50*	23.9
Black or African American	7*	24.1
Asian	2	33.3
Other	2	25.0

\*One participant from this population did not provide a response question

**Table 3: Young adults' feelings of fear/anxiety related to healthcare procedures**

Type	n	%
Needles	12	20.3
Pain	12	20.3
General Anxiety/Nervousness	9	15.3
Outcomes Related to Diagnosis/Treatment	7	11.9
Lack of Trust in Medical Personnel	5	8.5
Medical Procedures Other than Anesthesia	4	6.8
Anesthesia	4	6.8
Past Negative Experience(s)	3	5.1
Dislike of Bodily Fluids or Related	2	3.4
Other*	1	1.7
Total	59	100

\*Response attributed to other was "the difference in effect"

**Table 4: Types of fear/anxiety related to healthcare procedures by demographics**

	Male n (%)	White	Total Yes
Needles	0 (0)	12 (24.5)	12 (20.3)
Pain	0 (0)	9 (18.4)	12 (20.3)
General Anxiety/Nervousness	1 (20.0)	7 (14.3)	9 (15.3)
Outcomes Related to Diagnosis/Treatment	0 (0)	7 (14.3)	7 (11.9)
Lack of Trust in Medical Personnel	0 (0)	3 (6.1)	5 (8.5)
Medical Procedures Other than Anesthesia	2 (40.0)	3 (6.1)	4 (6.8)
Anesthesia	1 (20.0)	3 (6.1)	4 (6.8)
Past Negative Experience(s)	0 (0)	3 (6.1)	3 (5.1)
Dislike of Bodily Fluids or Related	1 (20)	2 (4.1)	2 (3.4)
Other*	0 (0)	0 (0)	1 (1.7)
Total	5	49	59

\*Response attributed to other was "the difference in effect"

**Table 5: Demographics of reported fear/anxiety related to dental procedures**

	n	% of Demographic Population
Gender Identity		
Male	3	9.1
Female*	48	22.0
Non-Binary	1	100
Race/Ethnicity		
White*	42	20.1
Black or African American	8	27.6
Other	2	25.0

\*One participant from this population did not provide a response

**Table 6: Young adults' feelings of fear/anxiety related to dental procedures**

	n	%
Pain	15	29.4
Sensory Experiences Other than Pain	8	15.7
Past Negative Experience(s)	7	13.7
Dental Procedures	6	11.9
Personal Boundaries/Too Close for Comfort	5	9.8
Needles	3	5.9
General Anxiety/Nervousness	3	5.9
Outcomes Related to Diagnosis/Treatment	2	3.9
Tools	2	3.9
Total	51	100

**Table 7: Types of fear/anxiety related to dental procedures by demographics**

Type	Male n (%)	White
Pain	1 (33.3)	9 (22.0)
Sensory Experiences Other than Pain	0 (0)	6 (14.6)
Past Negative Experience(s)	0 (0)	7 (17.1)
Dental Procedures	1 (33.3)	6 (14.6)
Personal Boundaries/Too Close for Comfort	0 (0)	5 (12.1)
Needles	0 (0)	3 (7.3)
General Anxiety/Nervousness	1 (33.3)	2 (4.9)
Outcomes Related to Diagnosis/Treatment	0 (0)	1 (2.4)
Tools	0 (0)	2 (4.9)
Total	3	41

**Table 8: Cross-tabulation of types of fear/anxiety related to healthcare and dental procedures**

	Pain
Fear/Anxiety Related to Healthcare Procedures	
Needles	0
Pain	3
General Anxiety/Nervousness	0
Outcomes Related to Diagnosis/Treatment	1
Lack of Trust in Medical Personnel	1
Medical Procedures Other than Anesthesia	1
Anesthesia	1
Dislike of Bodily Fluids or Related	0

young adulthood, individuals transition to adult primary care.<sup>[28]</sup> However, at the same time, they tend to access healthcare less

often due to barriers,<sup>[28]</sup> mistrust,<sup>[21]</sup> and uncertainty about how to transition between primary care settings.<sup>[29]</sup> Therefore, these findings are of direct relevance to primary physicians as the ones who will serve young adults with pre-existing fears and mistrust of medical providers. Primary physicians should be aware of patients' fears related to needles and pain given the significant impact they can have on healthcare consumership, avoidance, and overall health and offer support to help address such fears.

Just as healthcare anxiety is a risk factor for negative health outcomes, dental fear and anxiety are associated with reduced dental attendance and numerous negative health outcomes associated with it, including increased rates of destroyed teeth and reduction in health-related quality of life.<sup>[14,16,23,31-34]</sup> The current study found that the most common theme in fear/anxiety attributed to dental procedures was pain, which past studies have also reported as a major factor in dental anxiety. Pain, along with associated negative past experiences, is directly related to avoidance of dental care among young adults.<sup>[33-37]</sup> Dental health is directly related to one's overall health.<sup>[19,30]</sup> Thus, primary care providers should continually assess patients' use of dentists and discuss ways to address fears that may affect such visits.

The study's second research question aimed to investigate potential relationships between demographics and reported fear/anxiety related to dental and healthcare procedures. Considering people of different backgrounds and identities' experience dental and healthcare visits differently,<sup>[3,23,25,26,38]</sup> it is important to continue to investigate patterns in their experiences to develop further understanding. Most study participants were female, but, consistent with past research findings,<sup>[1,2,19,23,24,26,35,38,39]</sup> a significantly larger percentage of female participants than males still reported fear/anxiety related to healthcare and dental procedures. The discrepancy between the sample's demographic populations makes it difficult to draw significant conclusions, but multiple observable patterns of interest did emerge. Notably, only White females' responses fell into the needles and past negative experience(s) categories. Though past research notes higher rates of needle fear and anxiety among females,<sup>[19,24]</sup> it does not note a lack of either for males or other demographic populations.<sup>[7,11,33,36,39]</sup> Interestingly, some studies propose that discrepancies in reported dental fear and anxiety may not be due to differing rates of occurrence between genders but that it might be better explained by male participants' perceptions of cultural gender roles, making it less acceptable for them to admit such experiences.<sup>[40,41]</sup> Given this information, further investigation into these patterns is needed.

While the minority population in the study was limited and cannot reach statistical significance, researchers noted that most participants identifying as Black or African American cited pain as the source of their fear/anxiety related to dental procedures. Siegel *et al.*<sup>[33]</sup> found fear of oral pain to be pervasive among the African American population studied, but they further attributed these fears to a fear of injections or fear of dental drills, which this study coded into separate categories. Thus, patterns in these findings are



not fully explained by past research and denote a potential area for further exploration. Similarly, only one respondent identified as non-binary, a population more likely to face discrimination and negative experiences in healthcare settings,<sup>[3]</sup> and they were among the participants that reported fear/anxiety related to both dental and healthcare procedures. Given the current study's small sample size, it is impossible to generate significant conclusions from demographic components outside of binary gender, but the results demonstrate a need for further related research to examine relevant patterns and inform future practices.

The study's final research question sought to determine whether a relationship between young adults' fear/anxiety related to healthcare procedures and that related to dental procedures existed. Past studies note potential correlations between fears of healthcare and dental procedures,<sup>[27]</sup> yet there is a significant gap regarding the topic, which this study aims to help fill. Consistent with conclusions of Almoznino *et al.*,<sup>[27]</sup> the current study found a significant correlation between fear/anxiety related to dental and healthcare procedures, indicating a relationship between the variables. It is important that primary physicians recognize the potential impact their services may have on other healthcare providers such as dentists and vice versa. The application of full assessments of patients' histories, including the psycho-social impact of past healthcare experiences, by providers in both settings can serve as a valuable tool to better support patients and promote trust in their relationships with providers. While the fear of needles is commonly investigated in current research on both forms of fear/anxiety,<sup>[19,24,33]</sup> the overlap in types of fear/anxiety did not demonstrate significant commonalities between categories. Thus, further investigation surrounding the relationship between these variables should be conducted to better understand factors contributing to such co-occurrences between the two types of fear/anxiety.

As previously noted, distrust in medical professionals is known to promote healthcare renunciation,<sup>[28]</sup> which is negatively impacted by fears and anxieties related to healthcare.<sup>[3,19]</sup> Due to the negative effects that this can have on one's health, such as delayed medical treatment,<sup>[30]</sup> improving current knowledge of factors contributing to healthcare renunciation is of importance. The negative relationship between fear/anxiety related to healthcare procedures and participants' confidence in healthcare providers' ability to provide optimal care in the current study indicates that young adults experiencing fear/anxiety related to healthcare procedures are more likely to experience lower levels of trust in medical professionals, both of which are factors associated with reduced healthcare utilization and negative health outcomes.<sup>[3,19,21,28,30]</sup> Thus, patients experiencing fear/anxiety related to healthcare procedures, regardless of type, may benefit from strategies and interventions designed to promote trust in medical professionals and develop positive relationships with them, which starts with promoting effective communication.<sup>[42]</sup>

### Implications of the current research

Given the negative effects that fear/anxiety related to dental

and healthcare procedures can have on one's well-being and overall health, it is important that researchers and healthcare professionals understand the factors influencing them to better support patients. This is especially true for primary physicians, given their prominent role as patients' main point of contact within healthcare systems.<sup>[43]</sup> Identifying common types of related fear/anxiety is key for informing future research and the development of evidence-based interventions for professionals to implement in healthcare settings. As both forms of fear/anxiety are linked to reduced engagement in the respective forms of care,<sup>[2,13,14,19,23,28,30]</sup> it is imperative that such interventions are developed. Primary care providers should be aware of common sources of fear and anxiety and work with patients to identify them, offering individualized interventions, like providing education on needles for those with injection phobias and implementing pain management strategies for patients who might otherwise avoid treatment for fear of pain.

### Limitations

The present study has multiple limitations that must be noted. First, the study utilized convenience sampling. Some limitations of convenience sampling include the introduction of biases related to why someone chose to participate and overrepresentation by a specific group. In this case, there was overrepresentation by White females, reducing its generalizability. Some participants were also offered extra credit if they completed the study, allowing for a degree of questioning of the reliability of participants. The study relied solely on self-reports and coded all responses into single categories, limiting participants' responses to one type. Finally, the study fails to examine any causative relationships between variables due to methodological limitations.

### Future research

Future research should further examine the relationship between fear/anxiety related to dental and healthcare procedures in addition to exploring that between such variables and demographic factors. Studies should employ larger samples with individuals from more diverse populations and backgrounds. Additionally, future studies should examine further demographic factors, including socio-economic status. Future studies should include recruitment from patients currently seeing a primary physician or dentist to determine if similar relationships are found. The current study utilized open-ended responses to gather information on what participants viewed as factors underlying their fear/anxiety, but the development of further questionnaires or surveys based upon the types found in current research is needed. The use of objective measures, like blood pressure or heart rate, to measure fear/anxiety in various healthcare settings outside of self-report questionnaires should also be employed.

### Conclusion

Fear and anxiety related to dental and healthcare procedures are common among young adults treated by primary care physicians. The present study sought to examine young adults' experiences of fear related to healthcare and dental procedures and potential

relationships between the two forms of fear experiences and demographic factors. The most common fears/anxieties reported were needles and pain related to healthcare experiences and pain and other sensory experiences related to dental experiences. Results of analyses demonstrate significant relationships between gender and fear/anxiety related to healthcare procedures and between fear/anxiety related to dental and healthcare procedures, indicating that individuals with one form of procedural fear/anxiety are significantly more likely to experience the other. Investigating these areas further can help inform the development of evidence-based interventions and strategies geared toward improving the overall health and well-being of young adults by helping primary physicians address underlying causes of dental and healthcare fear/anxiety.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

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